HS3 Flight 2011-09-01

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The primary mission goal was to test the Scanning HIS, CPL, and AVAPS instruments for science data acquisition. Specifically, the goals were to ensure that the dropsondes adequately cleared the aircraft when released. During GRIP, the GH used a deep radome, whereas for HS3 in 2012 a shallower radome will be used. As a result, the GH team wanted to make sure that the change did not impact the ability of the sondes to clear the aircraft. In addition, since CPL was placing some of its components in the compartment with the Ku antenna, we wanted to ensure that all components functioned as expected. Finally, this was the first flight for S-HIS. The flight was done without a functional Ku communication system, which was not needed for the flight. The flight took off at 7 am Pacific and lasted for 5 h 50 min.

The first activity during the flight was the dropsonde test in the range. From an altitude of 15 kft, the GH did four passes over the drop area, each time releasing one sonde. The first three were done along a straight flight path while the last was done during a right turn. All four sondes cleared the aircraft with adequate space and all performed well during descent. All four sondes were recovered in the range the next day and were in excellent condition.

The second activity tested CPL performance, also done at 15 kft. CPL collected data in the PIRA (Precision Impact Range Area) and performed as expected. After the flight, CPL was taken off the aircraft and HAMSR installed right after.

S-HIS performed well during the flight. While at lower altitude, the instrument got warmer than desired (the instrument is designed for the colder environment at higher altitudes), but at higher altitude, the air temperature, while warmer than optimal for calibration purposes, was adequate for instrument performance. The flight continued at high altitude until temperatures reached equilibrium.

In summary, the range flight verified the functionality and readiness of all scientific instruments.